

Notice of Allowability

Application No.

10/601,842

Applicant(s)

OH ET AL.

Examiner

Art Unit

Greg F. Cunningham

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment received 7/23/2007.
2. ☒ The allowed claim(s) is/are 1 and 3-20.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

1. This action is responsive to amendment filed 07/23/2007.
2. The disposition of the claims is as follows: claims 1 and 3 - 20 are pending in the application. Claims 1, 11, 15 and 18 are independent claims. Claim 2 was previously cancelled.

Claim Rejections - 35 USC § 103

3. In view of amended and cancelled claims and review of cited references, 103 rejections are withdrawn.

Examiner's Amendment

4. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Since it was the Applicants' intent to make claim 13 depend from claim 1, the application has been amended as follows:

Change claim 13 from:

-- A clone-brushing method of painting in an 2D image according to claim 1, wherein the destination position is a snapped destination position. --

To now read as:

-- The clone-brushing method of painting in an 2D image of claim 1, wherein the destination position is a snapped destination position. --

Allowable Subject Matter

5. Claims 1 and 3 - 20 are allowed.
6. The following is an examiner's statement of reasons for allowance:

Applicant's amended independent claim 1 stands novel over the related prior art. For instance, the related art of Trajkovic (US 7,003,150 B2), does make use of image points m (defined by coordinates x,y) and m' (defined by coordinates x',y'), which represent the projection of the image pixel W onto the image planes R and R' , respectively, constitute a conjugate pair, and a fundamental matrix F relating such conjugate pairs may be computed (see, e.g., "Epipolar Geometry and the Fundamental Matrix" in R. Hartley & A. Zisserman, Multiple View Geometry in Computer Vision, pp. 219 242 (Cambridge University Press 2000), incorporated herein by reference) and employed to develop a 3×3 homography matrix H for projective mapping of image points from the first camera or view reference frame to the second according to the linear projective equation:
$$\begin{bmatrix} x' \\ y' \\ 1 \end{bmatrix} = H \begin{bmatrix} x \\ y \\ 1 \end{bmatrix}$$
 which may be equivalently written as:
$$\begin{bmatrix} x' \\ y' \\ 1 \end{bmatrix} \begin{bmatrix} h_{11} & h_{12} & h_{13} \\ h_{21} & h_{22} & h_{23} \\ h_{31} & h_{32} & h_{33} \end{bmatrix} = \begin{bmatrix} x \\ y \\ 1 \end{bmatrix}$$
 Homography describes a one-to-one point mapping between the two images for either pure rotation by the camera or for world image points within a plane.

However, Trajkovic is more concerned with projections of image pixel W and curing the deficiencies and difficulties of computation of the homography matrix for the plane at infinity, which requires knowledge of either (1) three sets or parallel lines, (2) point matches between the views corresponding to points very far away from the camera, or (3) complete camera calibration parameters. Trajkovic lacks defining a transformation that maps the destination position relative to the first world plane to the source position relative to the first world plane using a homography

Art Unit: 2624

defined by the first world plane, and identifying pixels in the source region of the 2D image corresponding to pixels in the destination region of the 2D image using the transformation and the homography; transforming 2D image information of the source region relative to the first world plane to 2D image information of the destination region; and painting in the 2D image by copying the transformed 2D image information to the destination region” as claimed by independent claims 1, 15 and 18.

Furthermore the prior art lacks, inter alia, computing a color ratio between the first color sample region and the second color sample region; applying the color ratio to 2D image information of the source region and transforming the 2D image information of the source region to 2D image information of the destination region; and painting by copying the transformed 2D image information to the destination region as claimed in independent claim 11.

Therefore as claimed by the combined elements of amended independent claims 1, 11, 15 and 18, the cited references and prior art of record lack separately and in combination the elements of amended claims.

Claims 3-10, 13, 14; 12; 16-17; and 19-20 depend from allowable independent claims 1, 11, 15 and 18, respectively, and therefore are also allowed.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Art Unit: 2624

Responses

8. Responses to this action should be mailed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231. If applicant desires to fax a response, (703) 872-9306 may be used for formal communications.

Inquiries


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory F. Cunningham whose telephone number is (571) 272-7784.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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Greg Cunningham

Examiner, Art Unit 2624

8/24/2007